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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,802	07/12/2006	Jon Erik Brennvall	06085	3412

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EXAMINER	
DESAI, NAISHADH N	

ART UNIT	PAPER NUMBER
2834	

MAIL DATE	DELIVERY MODE
05/05/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/584,802	BRENNVALL ET AL.	
	Examiner	Art Unit	
	NAISHADH N. DESAI	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *2/27/2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-19, 21-29* is/are pending in the application.

4a) Of the above claim(s) *22-26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-19,21 and 27-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/27/2009 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 15-19,21 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barthalon et al (US 3707924) in view of White (US 4067667) and Glaser et al (US 5271632).

2. Regarding claim 15, Barthalon et al teaches:

Machine with an electromechanical converter, comprising (abstract):

a closed tubular cylinder having end chambers (Fig 20,231);

a linear movable piston (Fig 20,234) supporting a row of centrally placed tubular magnetic elements in the form of permanent magnets or coils (Fig 20,241), and arranged within the closed tubular cylinder to operate as a working element in a motor or a generator (abstract and Fig 20,231 and 325) and which is provided with magnetic elements (abstract) which establish an outwardly directed electrical field of force (Col 17 ll 58-63),

the end chambers being sealed sufficiently that at each end of the piston there is formed a gas spring of a pressure of at least 10 bar providing a resonance-effective arrangement (Fig 20, C below, also Cols 3 ll 63-68, C 4 ll 1-5, C17 ll 12-17,43-65); and

a row of tubular coordinated coils (Fig 20,240) or permanent magnets disposed around the piston (Fig 20,234) within the cylinder (Fig 20,231) for increasing piston area of the machine and/or length of stroke of the piston (Col 17 ll 28-30),

interaction between magnetic fields of the coordinated coils or permanent magnets and the magnetic elements obtaining energy transmission upon axial movement of the piston in the cylinder (Fig 20 and Col 17 ll 28-31).

Barthalon et al do not teach the end chambers are “opposed and sealed”.

White teaches a device wherein the end chambers (Fig 1,33,34 and Fig 2,44,49) are "opposed and sealed" and wherein the end chambers are sealed sufficiently that at each end of the piston there is formed a gas spring (Col 3 ll 33-35).

White does not explicitly mention that the gas spring pressure is at least 10 bar.

Glaser et al teaches a device utilizing air springs (Col 1 ll 50-53) designed to operate at pressures above 10 bar (Col 9 ll 17-23).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of Barthalon et al to incorporate the teachings of White and Glaser to make an apparatus having opposed sealed end chambers wherein providing a gas spring of a pressure of at least 10 bar. The motivation to do so would be that it would allow one to provide a resonant mechanical system for varying the stiffness of the gas spring as a function of the oscillation amplitude of the mechanical system (Col 2 ll 10-13 of White). The motivation would also be that it would allow one to improve operator safety and comfort (Col 1 ll 64-65 of Glaser).

3. Regarding claim 16, Barthalon et al teaches that the piston comprises a concentric row of tubular magnetic elements which are placed with a mutual intermediate gap (Fig 20,237,241), in which gaps are arranged tubular coil

arrangements (Fig 20,240) with the coordinated coils for increasing the area of the piston.

4. Regarding claim 17, Barthalon et al teaches that the piston (Fig 20,234), is at least on one end, connected to a piston bar (Fig 20,235), said piston bar being guided out through an end chamber for transferring mechanical energy to or from the machine (Fig 20,330).

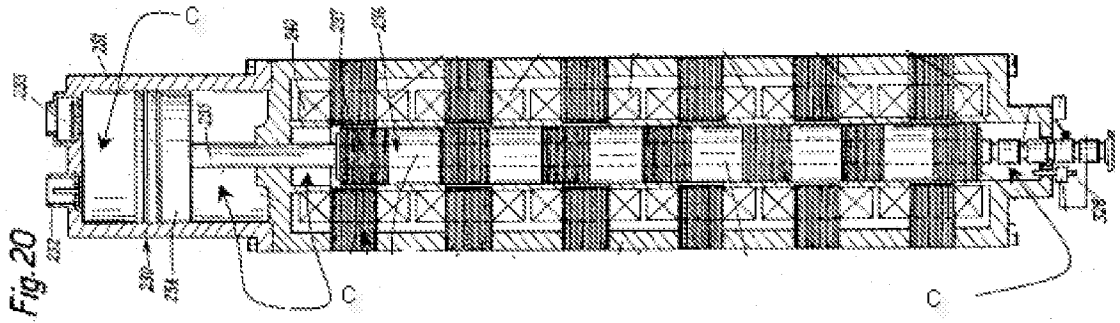

Fig 20

5. Regarding claim 18:

Machine according to claim 16, characterized in that the mass of the piston is over 4 kg.

Barthalon et al discloses the claimed invention (including “oscillation of a pump of a large size” in Col 18 l 39) except for the shape or size of the piston to be over 4 kg. It would have been an obvious matter of design choice to make the mass of the piston to be over 4kg, since such a modification would have involved a mere change in the shape of a component. A change in shape or size is generally recognized as being within the level of ordinary skill in the art. *In re Rose, 105 USPQ 237 (CCPA 1955).*

6. Regarding claim 19:

Machine according to claim 16, wherein the machine has a length of stroke of about 10 cm and the piston has an area greater than $0.03m^2$.

Barthalon et al discloses the claimed invention (including the stroke exceeding a predetermined value in Col 18 l 49) except for the shape or size of the piston to be greater than 0.03 m^2. It would have been an obvious matter of design choice to make the area of the piston greater than 0.03 m^2, since such a modification would have involved a mere change in the shape of a component. A change in shape or size is generally recognized as being within the level of ordinary skill in the art. *In re Rose, 105 USPQ 237 (CCPA 1955).*

7. Regarding claim 27:

In combination, a machine according to claim 15, and an element which is constructed and arranged to be vibrated, the machine being placed directly on the element without a piston bar.

Barthalon et al discloses the claimed invention except for mentioning that the device (without a piston bar) can also be placed on an element to be vibrated. Also Col 4 ll 51-57 teaches that the device can be used for a drilling platform. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham, 2 USPQ2d 1647 (1987).*

8. Regarding claim 28:

Combination according to claim 27, wherein the machine is constructed and arranged to be coupled on the rear of the bit of a drill steel for drilling for oil and mining operations, to generate hammer drilling with an ordinary drill.

9. Regarding claim 29:

Combination according to claim 27, wherein the machine is constructed and arranged to be coupled to a tube or a beam which is to be driven down into the ground.

As per claims 28 and 29 above, Barthalon et al discloses the claimed invention except for mentioning that the device can also be used as a drill for drilling oil or driven into the ground. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham, 2 USPQ2d 1647 (1987).*

10. Regarding claim 21, Glaser (Col 9 ll 16-21) teaches that the pressure in the device is capable of handling pressures greater than 30 bar.

Response to Arguments

11. Applicant's arguments with respect to claims 15-21,27-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAISHADH N. DESAI whose telephone number is (571)270-3038. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen Leung can be reached on (571) 272-8188. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quyen Leung/
Supervisory Patent Examiner, Art Unit 2834

Naishadh N Desai
Patent Examiner